

Updating of the actual capability of dam outlet works

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8th Bulgarian-Austrian Seminar

Big dams in Bulgaria meet modern requirements for constructive and technological safety and environmental protection.



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Gaps in technical exploitation are most often observed in small dams



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CATEGORIZATION OF DAMS

(according art. 41 (2), ORDINANCE № 14 from June 15, 2005 z. For technical rules and norms for design, building and construction and use of facilities for the production, transformation, transmission and distribution of electricity)

DAM TYPE	SOIL TYPE of THE FOUNDATION SURFACE	DAM CATEGORY			
		I	II	III	IV
		Dam height [m]			
Embankment dams	Rock	above 100	between 50 and 100	between 15 and 50	up to 15
	Sandy, gravel, clay in solid or semi-solid state	above 70	between 35 and 70	between 15 and 35	up to 15
	Clay, water saturated in plastic state, find sand	above 40	between 20 and 40	between 10 and 20	up to 10
Concrete and reinforced concrete dams	Rock	above 100	between 50 and 100	between 20 and 50	up to 20
	Sandy, gravel, clay in solid or semi-solid state	above 40	between 20 and 40	between 10 and 20	up to 10
	Clay, water saturated in plastic state, find sand	above 20	between 15 and 20	between 10 and 15	up to 10

DESINING OF SPILLWAYS

(according art. 54 (1), ORDINANCE № 14 from June 15, 2005 z. For technical rules and norms for design, building and construction and use of facilities for the production, transformation, transmission and distribution of electricity)

DAM CATEGORY	I	II	III	IV	V
Discharge probability of exceedance [%]	0,01	0,1	0,5	1,0	3.0

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EXAMPLES FOR THE STATE OF THE EARTH-FILL DAMS OWNED BY MUNICIPALITIES



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FUNCTIONS OF THE OUTLET WORKS

(according art. 71 1st art 75, ORDINANCE № 14 from June 15, 2005 z. For technical rules and norms for design, building and construction and use of facilities for the production, transformation, transmission and distribution of electricity)



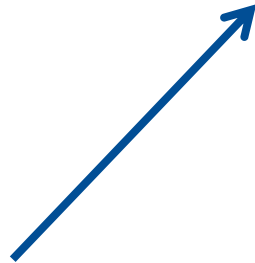
DAM AND ITS FACILITIES

OPERATION



DAM OWNER

*(art. 40 and art. 146 from
the ORDINANCE in power
issued in October 2016)*

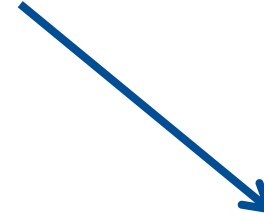


SUPERVISION



STATE AGENCY FOR
METROLOGICAL AND TECHNICAL
SUPERVISION

(art 141, Water Act)



CONCLUSIONS AND RECOMMENDATIONS



THANK YOU FOR YOUR ATTENTION !